IN THE CLAIMS

The following is a complete listing of the claims, which replaces all previous versions and listings of the claims.

1.   (currently amended) A method for selectively transferring image data, the method comprising:

selecting an image resolution suitable for display in a desired viewport from a plurality of different image resolutions, wherein the image resolution corresponds to one set of a plurality of data sets decomposed from an image by lossless wavelet decomposition, and wherein the image resolution is determined via an iterative process that comprises determining whether scaling of one of the different image resolutions of the plurality of different image resolutions by a predetermined scaling threshold would result in a scaled image resolution that is less than or equal to the resolution of the desired viewport; and

selectively requesting a portion of the plurality of data sets for recomposition of the image at the image resolution, the portion of the plurality of data sets being smaller than the plurality of data sets, wherein selectively requesting the portion comprises requesting a data stream comprising the plurality of data sets arranged sequentially in a desired order based upon the lossless wavelet decomposition, wherein the data sets form part of an image data file that is losslessly wavelet decomposed and that is stored in a losslessly compressed form on a server independent of any request from a client for data of the data sets.

2.   (original) The method of claim 1, wherein the lossless wavelet decomposition comprises lossless integer wavelet decomposition.

3.   (canceled)

4. (previously presented) The method of claim 1, wherein the acts of selecting the image resolution and selectively requesting the portion are executed automatically.

5. (original) The method of claim 1, wherein each of the data sets comprises a hierarchical set of sub-bands, one set comprising a low frequency component at a lowest resolution level and each remaining set comprising high frequency components at successively higher resolution levels.

6. (original) The method of claim 5, wherein each of the high frequency components are losslessly compressed using actual values and, wherein the low frequency component at the lowest resolution level is losslessly compressed using prediction errors.

7. (original) The method of claim 1, wherein selecting the image resolution comprises selecting the image resolution from a plurality of progressively higher resolution levels, each corresponding to one of the plurality of data sets.

8. (currently amended) The method of claim 7, wherein selecting the image resolution comprises identifying a lowest suitable one of the plurality of progressively higher resolution levels that does not require upward scaling beyond a desired the scaling threshold for display in the desired viewport.

9. (original) The method of claim 8, wherein identifying the lowest suitable one comprises evaluating a highest local resolution level of the plurality of progressively higher resolution levels.

10.   (previously presented) The method of claim 9, wherein selectively requesting the portion comprises recalling the highest local resolution level, which is the lowest suitable one.

11.   (previously presented) The method of claim 9, wherein selectively requesting the portion comprises remotely retrieving the lowest suitable one, and any resolution levels between the highest local resolution level and the lowest suitable one, from remote storage.

12.   (original) The method of claim 1, wherein selecting the image resolution comprises zooming the desired viewport toward a desired viewport resolution.

13.   (original) The method of claim 12, wherein zooming the desired viewport comprises zooming the desired viewport inwardly toward a spatial region of interest.

14.   (previously presented) The method of claim 13, wherein selectively requesting the portion comprises:

identifying a highest local resolution level corresponding to a highest locally stored set of the plurality of data sets; and

locating the image resolution selected.

15.   (previously presented) The method of claim 14, wherein locating comprises:

identifying a remote storage location if the image resolution exceeds the highest local resolution level; and

requesting from the remote storage location a group of the plurality of data sets comprising the one set and any sets of the plurality of data sets corresponding to resolution levels between the highest local resolution level and the image resolution selected.

16.   (original) The method of claim 14, wherein locating comprises:

identifying a local storage location if the highest local resolution level exceeds the image resolution selected; and

recalling the portion from the local storage location.

17.   (original) The method of claim 12, wherein zooming the desired viewport comprises zooming the desired viewport outwardly for viewing a relatively broader region of interest.

18.   (previously presented) The method of claim 17, wherein selectively requesting the portion comprises using a highest local resolution level corresponding to a locally stored group of the plurality of data sets for zooming the desired viewport outwardly.

19.   (original) The method of claim 1, further comprising scaling the image resolution to fit the desired viewport.

20.   (canceled)

21.   (previously presented) The method of claim 1, wherein the desired order comprises an order of increasing resolution.

22.   (previously presented) The method of claim 1, wherein requesting the data stream comprises obtaining image characteristics disposed in a header of the data stream.

23.   (original) The method of claim 22, wherein the image characteristics comprise a quantity of the plurality of data sets, a resolution of each data set, and a compressed size of each data set.

24.   (original) The method of claim 22, comprising reading the image characteristics disposed in the header during retrieval of the data stream for selectively retrieving the portion.

25.   (canceled)

26.   (original) The method of claim 1, comprising storing the portion in local storage.

27.   (original) The method of claim 1, comprising recomposing the image at the image resolution by combining the portion retrieved from remote storage with a local portion of the plurality of data sets stored in local storage.

28.   (original) The method of claim 27, wherein the recomposing the image at the image resolution comprises executing reverse wavelet decomposition on a group of the data sets ranging from a lowest resolution level to the image resolution, wherein the group comprises the portion and the local portion.

29. (currently amended) A method for selectively transferring image data, the method comprising:

determining a viewport resolution of a client viewport;

identifying a highest local resolution level corresponding to one local set of a plurality of decomposed image sets generated from an image by lossless wavelet decomposition;

selecting an acceptable image resolution for display in the client viewport by comparing the viewport resolution against progressively higher resolution levels corresponding to the plurality of decomposed image sets, wherein the acceptable image resolution is selected via an iterative process that comprises determining whether scaling of one of the progressively higher resolution levels by a predetermined scaling threshold would result in a scaled image resolution that is less than or equal to the viewport resolution; and

remotely retrieving desired sets of the plurality of decomposed image sets for recomposing the image at the acceptable image resolution, wherein the decomposed image sets form part of an image data file that is losslessly wavelet decomposed and that is stored in a losslessly compressed form on a server independent of any request from a client for data of the image sets.

30. (original) The method of claim 29, wherein the lossless wavelet decomposition comprises lossless integer wavelet decomposition.

31. (original) The method of claim 29, wherein each of the decomposed image sets comprises a hierarchical set of sub-bands, one set comprising a low frequency component at a lowest resolution level and each remaining set comprising high frequency components at successively higher resolution levels.

32.   (currently amended) The method of claim 29, wherein selecting the acceptable image resolution comprises identifying a lowest suitable one of the progressively higher resolution levels that does not require upward scaling beyond a~~desired~~ the scaling threshold for display in the desired viewport.

33.   (original) The method of claim 32, wherein remotely retrieving desired sets comprises locally accessing the highest local resolution level if the lowest suitable one is less than or equal to the highest local resolution level.

34.   (original) The method of claim 32, wherein remotely retrieving desired sets comprises remotely retrieving the lowest suitable one and any intermediate sets having resolution levels between the highest local resolution level and the lowest suitable one.

35.   (original) The method of claim 29, wherein remotely retrieving desired sets comprises requesting the desired sets from a remote server via a network.

36.   (original) The method of claim 29, wherein selecting the acceptable image resolution comprises zooming the client viewport toward the viewport resolution.

37.   (original) The method of claim 36, wherein zooming the client viewport comprises zooming the client viewport inwardly toward a spatial region of interest.

38.   (original) The method of claim 36, wherein zooming the client viewport comprises zooming the client viewport outwardly for viewing a relatively broader region of interest.

39.   (original) The method of claim 38, wherein zooming the client viewport outwardly comprises avoiding the act of remotely retrieving desired sets, and using the highest local resolution level for display in the client viewport.

40.   (original) The method of claim 29, wherein selecting the acceptable image resolution comprises selecting the highest local resolution level as the acceptable image resolution if the highest local resolution level does not require unacceptable scaling to equal the viewport resolution.

41.   (original) The method of claim 40, wherein remotely retrieving desired sets is not performed if the highest local resolution level is selected as the acceptable image resolution.

42.   (original) The method of claim 29, further comprising scaling the acceptable image resolution to fit the client viewport.

43.   (original) The method of claim 29, wherein remotely retrieving the desired sets comprises requesting a data stream comprising the desired sets of the plurality of decomposed image sets arranged sequentially in order of increasing resolution.

44.   (original) The method of claim 43, wherein the acts of determining the viewport resolution, identifying the highest local resolution level, selecting the acceptable image resolution, and remotely retrieving desired sets are executed automatically as a user interacts with the client viewport.

45.   (original) The method of claim 43, wherein requesting the data stream comprises obtaining image characteristics disposed in a header of the data stream.

46.   (original) The method of claim 45, comprising reading the image characteristics disposed in the header during retrieval of the data stream for selectively retrieving the desired sets.

47.   (original) The method of claim 46, comprising breaking transmission of the data stream upon complete retrieval of the desired sets.

48.   (original) The method of claim 29, comprising recomposing the image at the acceptable image resolution by combining the desired sets retrieved from remote storage with local sets of the plurality of decomposed image sets stored in local storage.

49.   (original) The method of claim 48, wherein the recomposing the image at the acceptable image resolution comprises executing reverse wavelet decomposition on a group of the decomposed image sets ranging from a lowest resolution level to the acceptable image resolution, wherein the group comprises the desired sets and the local sets.

50.   (currently amended) A system comprising:

a viewport analysis module configured for determining a viewport resolution of a client viewport;

a data selection module, comprising:

a local data identifier configured for identifying a highest local resolution
level corresponding to one local set of a plurality of decomposed

image sets generated from an image by lossless wavelet decomposition; and

a desired data identifier configured for identifying an acceptable image resolution for display in the client viewport via an iterative process that comprises determining whether scaling of one resolution level corresponding to one decomposed image set of the plurality of decomposed image sets by a predetermined scaling threshold would result in a scaled image resolution that is less than or equal to the viewport resolution; and

a data retrieval module configured for remotely retrieving desired sets of the plurality of decomposed image sets for recomposing the image at the acceptable image resolution, wherein the decomposed image sets form part of an image data file that is losslessly wavelet decomposed and that is stored in a losslessly compressed form on a server independent of any request from a client for data of the image sets.

51.   (original) The system of claim 50, wherein the viewport analysis module, the data selection module and the data retrieval module are disposed on a client workstation.

52.   (original) The system of claim 50, comprising an automation module configured for automatically executing the viewport analysis module, the data selection module, and the data retrieval module.

53.   (original) The system of claim 50, wherein the lossless wavelet decomposition comprises lossless integer wavelet decomposition.

54.   (original) The system of claim 50, wherein each of the decomposed image sets comprises a hierarchical set of sub-bands, one set comprising a low frequency component at a lowest resolution level and each remaining set comprising high frequency components at successively higher resolution levels.

55.   (original) The system of claim 50, wherein the desired data identifier comprises a resolution comparator configured for comparing the viewport resolution against progressively higher resolution levels corresponding to the plurality of decomposed image sets.

56.   (currently amended) The system of claim 55, wherein the resolution comparator comprises a minimum acceptable resolution identifier configured for identifying a lowest suitable one of the progressively higher resolution levels that does not require upward scaling beyond a desired the scaling threshold for display in the client viewport.

57.   (original) The system of claim 56, wherein the data retrieval module comprises a local data access module configured for locally accessing the highest local resolution level if the lowest suitable one is less than or equal to the highest local resolution level.

58.   (original) The system of claim 56, wherein the desired data identifier is configured to identify a desired data group comprising the lowest suitable one and any intermediate sets having resolution levels between the highest local resolution level and the lowest suitable one.

59.   (original) The system of claim 50, wherein the data selection module comprises a data optimization module configured to use the highest local resolution level for display in the client viewport until the data retrieval module operates to retrieve desired sets.

60.   (original) The system of claim 50, comprising an image scaling module configured for scaling the acceptable image resolution to fit the client viewport.

61.   (original) The system of claim 50, wherein the data retrieval module is configured for remotely retrieving the desired sets in a data stream comprising the desired sets of the plurality of decomposed image sets.

62.   (original) The system of claim 61, wherein the data retrieval module comprises a data stream analyzer configured for reading image characteristics disposed in a header of the data stream.

63.   (original) The system of claim 62, wherein the data stream analyzer comprises a data selector configured for analyzing the data stream during transmission and for breaking transmission of the data stream upon complete retrieval of the desired sets.

64.   (original) The system of claim 50, wherein the system comprises a picture archiving and communication system.

65.   (original) The system of claim 64, further comprising one or more imaging systems.

66.   (original) The system of claim 65, wherein the one or more imaging systems comprise an MRI system.

67.   (original) The system of claim 65, wherein the one or more imaging systems comprise a computed tomography system.

68.   (original) The system of claim 65, wherein the one or more imaging systems comprise a positron emission tomography system.

69.   (original) The system of claim 65, wherein the one or more imaging systems comprise a radio fluoroscopy system.

70.   (original) The system of claim 65, wherein the one or more imaging systems comprise a computed radiography system.

71.   (original) The system of claim 65, wherein the one or more imaging systems comprise an ultrasound system.

72.   (original) The system of claim 65, wherein the lossless wavelet decomposition comprises lossless integer wavelet decomposition.

73.   (currently amended) A computer program product comprising:

a machine readable medium;

a viewport analysis module stored on the machine readable medium and configured for determining a viewport resolution of a client viewport; and

a data selection module stored on the machine readable medium, comprising:

a local data identifier configured for identifying a highest local resolution level corresponding to one local set of a plurality of decomposed image sets generated from an image by lossless wavelet decomposition, wherein the decomposed image sets form part of an image data file that is losslessly wavelet decomposed and that is stored in a losslessly compressed form on a server independent of any request from a client for data of the image sets; and

a desired data identifier configured for identifying an acceptable image resolution for display in the client viewport via an iterative process that comprises determining whether scaling of one resolution level corresponding to one decomposed image set of the plurality of decomposed image sets by a predetermined scaling threshold would result in a scaled image resolution that is less than or equal to the viewport resolution.

74.   (previously presented) The computer program product of claim 73, wherein the viewport analysis module, the data selection module and the data retrieval module are disposed on a client workstation.

75.   (previously presented) The computer program product of claim 73, wherein the lossless wavelet decomposition comprises lossless integer wavelet decomposition.

76.   (previously presented) The computer program product of claim 73, wherein each of the decomposed image sets comprises a hierarchical set of sub-bands, one set comprising a low frequency component at a lowest resolution level and each remaining set comprising high frequency components at successively higher resolution levels.

77.   (previously presented) The computer program product of claim 73, wherein the desired data identifier comprises a resolution comparator configured for comparing the viewport resolution against progressively higher resolution levels corresponding to the plurality of decomposed image sets.

78.   (currently amended) The computer program product of claim 77, wherein resolution comparator comprises a minimum acceptable resolution identifier configured for identifying a lowest suitable one of the progressively higher resolution levels that does not require upward scaling beyond a desired the scaling threshold for display in the client viewport.

79.   (previously presented) The computer program product of claim 78, wherein data retrieval module comprises a local data access module configured for locally accessing the highest local resolution level if the lowest suitable one is less than or equal to the highest local resolution level.

80.   (previously presented) The computer program product of claim 78, wherein the desired data identifier is configured to identify a desired data group comprising the lowest suitable one and any intermediate sets having resolution levels between the highest local resolution level and the lowest suitable one.

81. (previously presented) The computer program product of claim 73, wherein the data selection module comprises a data optimization module configured to use the highest local resolution level for display in the client viewport until desired sets of the plurality of decomposed image sets are obtained and recomposed with the highest local resolution level.

82. (previously presented) The computer program product of claim 73, comprising an image scaling module configured for scaling the acceptable image resolution to fit the client viewport.

83. (previously presented) The computer program product of claim 73, comprising a data retrieval module configured for remotely retrieving desired sets of the plurality of decomposed image sets for recomposing the image at the acceptable image resolution.

84. (previously presented) The computer program product of claim 83, wherein the data retrieval module is configured for remotely retrieving the desired sets in a data stream comprising the desired sets of the plurality of decomposed image sets arranged sequentially in order of increasing resolution.

85. (previously presented) The computer program product of claim 84, wherein the data retrieval module comprises a data stream analyzer configured for analyzing the data stream during transmission and for breaking transmission of the data stream upon complete retrieval of the desired sets.

86.   (previously presented) The computer program product of claim 73, comprising an automation module stored on the machine readable medium and configured for automatically executing the viewport analysis module and the data selection module.